MONTANA SCHOOL for Deaf & Blind CHILDREN

giving kids the building blocks to independence

Technology Plan
2008-2011

Our vision for the students at the Montana School for the Deaf and the Blind, and for all the sensory-impaired students in Montana, is that through the use of technology they will become successful and contributing members of society.

Education, Communication and Independence for Life

Table of Contents

Section A: Overview

The Montana School for the Deaf and the Blind's (MSDB) 2008-2011 technology plan was created in fall 2007 by the technology committee (representatives from Administration, Education, Outreach, and Student Services departments as well as the Montana School for the Deaf and the Blind Foundation):

Ernie Bateman, Cottage Supervising Counselor
Staci Bechard, Librarian
Pam Boespflug, VI Outreach Consultant (via email)
Marty Guhl, HI Teacher
Cathy Jury, D/HH Outreach Consultant (via phone)
Jim Kelly, Dean of Students
Scott Patera, MSDB Foundation
Kim Schwabe, Supervising Teacher for the Deaf/Technology Coordinator
Jim Takenaka, VI Teacher
Josh Rutledge, Network Manager

It is the goal of MSDB to have realistic goals for using telecommunications and information technology to improve education and increase student achievement in our school. Based on the National Educational Technology Standards for Students (http://cnets.iste.org/students/), MSDB strives to initiate and sustain the most effective learning environments through technology integration. Research evidence (CARET, 2003, evidence&answerID=22) supports that technology is most effectively integrated into instruction when educators and education decision makers develop detailed plans for infusing technology as a tool to increase learning opportunities.

ISTE Technology Foundation Standards for Students

1. Basic operations and concepts
    - Students demonstrate a sound understanding of the nature and operation of technology systems.
    - Students are proficient in the use of technology.
2. Social, ethical, and human issues
    - Students understand the ethical, cultural, and societal issues related to technology.
    - Students practice responsible use of technology systems, information, and software.
    - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
3. Technology productivity tools
    - Students use technology tools to enhance learning, increase productivity, and promote creativity.
    - Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.
4. Technology communications tools
    - Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
    - Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
5. Technology research tools
    - Students use technology to locate, evaluate, and collect information from a variety of sources.

- Students use technology tools to process data and report results.
- Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

6. Technology problem-solving and decision-making tools
    - Students use technology resources for solving problems and making informed decisions.
    - Students employ technology in the development of strategies for solving problems in the real world.

MSDB's technology goals and objectives will help our students to meet challenging state standards using our technology curriculum (GTCC) which is aligned to the Montana Technology Content and Performance Standards because research (CARET, 2003, evidence&answerID=19) has shown that "technology is most effectively integrated into instruction when educators and education decision makers review and analyze the content of technology applications to determine if the introduced skills and knowledge align with curriculum content standards" .

Students and teachers at MSDB have access to technology and our teachers are prepared to integrate technology effectively into curricula and instruction. Our students and staff have access to technological resources including hardware, software, and technology integration support staff.

MSDB strives to increase teacher content knowledge to facilitate increased student improvement using the following strategies to meet the OPI Technology Plan Goals. These goals, as identified in the OPI Ed Tech Grant (Office of Public Instruction, updated 2004), are:

1. *Integrating technology into curriculum and instruction: All Montana teachers will be effective and efficient integrators of technology into their curriculum and instruction.*
2. *Integrating technology into curriculum and instruction: All Montana teachers will know, understand, and be able to teach the content knowledge required by the Montana Technology Content and performance standards for students.*
3. *Increasing the Ability of Teachers to teach Utilizing Technology: All Montana teachers and principals will be technologically proficient.*
4. *Enabling Students to meet Challenging State Standards: All Montana students will be technologically proficient by eighth grade.*

Strategies that result in effective instructional applications of technology's impact on teaching and learning are related to analytical incorporation of lesson or unit plans that describe how available hardware, networks, and content applications will be used to assist implementation of instructional objectives. Additional research and evaluation (CARET, 2003, evidence&answerID=28, answers&QuestionID=2) confirms that technology enables the development of higher order thinking skills when students are taught to apply the process of problem solving and are then allowed opportunities to apply technology in development of solutions in addition to working in collaborative groups while using computers to solve problems, and then using technology presentation with communication tools to present, publish, and share results of projects. **Reference** (Cotton, 1999 pp. 9-10, 15)

MSDB will provide opportunities for ongoing professional development to ensure that the staff knows how to use the new technologies to improve education and increase student achievement. Research evidence (Center CARET, 2003, answers&QuestionID=27) supports attendance and participation of teachers at high quality professional development opportunities pertaining to technology builds teacher confidence and interest in technology and that administrative allocation of time for teachers to collaboratively learn and practice using technology can increase teacher confidence and interest in

technology. In addition to yearly orientation opportunities to technology and media, staff can obtain training through:

- staff release time/PIR
- participation in technology workshops, conferences, or distance learning opportunities
- membership in Golden Triangle Cooperative with access to Summer Institutes and Regional Outreaches
- participation in annual Montana Education Association Conferences, Council for Exceptional Children conferences (or other professional groups as applicable)
- peer information exchange and support
- participation in opportunities offered by national training centers
- accessing technology journals, magazines and books
- collaboration in grant opportunities

As with other staff development, MSDB provides professional development opportunities for their IT staff.

MSDB's goals are aligned with our school improvement plan (5YCEP) and with the state technology plan. Students and staff are using technology to communicate with parents, families, and constituents regularly. This includes email, phone, relay/TDD, and VRS/video phone services. Students access library services and the Internet on a daily basis. Blind and low vision students access adaptive equipment and software regularly in order to access technology and electronic information. Captioned media (TV broadcasts, DVDs, streaming media from DCMP), text boxes, or real-time captioning is used in order to allow the deaf and hard of hearing students access to spoken information and media.

MSDB has a wise use policy that is given to parents, staff and students. Students and staff must sign a user agreement/contract before user rights are given. Wise use violations and student suspensions have continued to be low as consequences for violations are stiff. We have maintained and upgraded our computer lab management software. Home directory folders are limited in size depending on user; however, due to the increased use of digital media (photos/video) other network resources have been assigned for user storage. Student email boxes to be limited to 5MB. Staff do not have a set email quota as they have been good with keeping mailbox sizes down.

Technology equipment is catalogued in a database and educational software is shelved and catalogued within Library services for easy checkout. A rotation plan is in place to phase out old equipment and replace it with new. Staff/student surveys, departmental discussions on what equipment and services are needed to meet educational/technology goals, and overall agency needs/goals help determine on-going/future technology needs.

Our Outreach staff numbers have increased to 11 individuals (the 12th position is unfilled). Outreach staff are provided equipment necessary to perform their job functions as well as provided access to email and network processes by broadband connectivity and VPN access. A specific technology lending library of blind and low vision equipment has been created which can be demonstrated and/or loaned (limited time basis) to public schools serving blind and low vision students across Montana. In addition, turn key and/or loaner equipment for the deaf and hard of hearing is also available for demonstration or short term loan (real time captioning, sound systems, decoders).

GOALS (also see section B):

Student Learning Goal:

Students will meet Montana technology standards through the use of GTCC technology curriculum, the MSDB Pre-T Essential Technology Skills Checklist (aligned with GTCC) or through sensory specific technology curriculums.

Professional Development Goal:

MSDB will provide opportunities for staff development which emphasize technology as a teaching and learning tool. These opportunities will allow teachers to better integrate technology into their instructional activities as well as to continue to refine their basic technology skills. Staff will have access to technological resources including hardware, software, and technology integration support staff. In addition, MSDB will act as a technology resource to expand skills of professionals working with sensory-impaired students across Montana.

Network Goal:

To keep the network environment up-to-date and running smoothly while expanding it to access emerging technologies.

INSERVICE/TRAINING OPPORTUNITIES (See section C)

MSDB provides in house tech support for students and staff. Currently, we have a full-time network manager, a part-time technology coordinator, part-time technology assistant (independent vendor funded by MSDBF), and a teacher in the VI department assigned to technology/technology classes. The technology coordinator will cover technology instruction for the students in the deaf/hard of hearing department.

EQUIPMENT REQUESTS (See section D)

MSDB has a rotation plan to phase out old equipment and replace with new. Equipment requests are submitted by departments to meet educational and technology goals. Overall agency needs/goals are also addressed. Old equipment may be retained if needed for specific functions or sent to state surplus. MSDB has accessed state surplus equipment in order to obtain additional lasers and monitors. We also accept equipment donations if the equipment meets our needs.

BUDGET (Also see section E):

MSDB will provide a sufficient budget to acquire and support the non-discounted elements of our Technology Plan that will be needed to implement it. MSDB receives funding from E-Rate, rotation (state) budget, education (state) budget, Montana School for the Deaf and Blind Foundation (MSDBF), cash donations, and various grants. To assist in obtaining and completing grants, MSDB has access to a grant writer through the MSDBF.

EVALUATION PROCESS (Also see section F):

This technology plan will be reviewed annually and updated as necessary. All changes will be submitted to the Administration for their approval.

Section B: Goals, Objectives, Strategies, Performance Measurements, By Whom, Timelines, Cost Considerations, Costs, and Funding Sources

Area: Student Learning

Current Status: We have had a shift in student population to the lower grades (preschool and Kindergarten). These students are exploring computers and being introduced to basic technology concepts. Older students have had basic training in desktop applications (Word, Explorer, Outlook, PowerPoint, and others) and use these in producing works across the curriculum along with other technology (video cameras, digital cameras, etc.). Students requiring assistive/adaptive hardware and software to access various technologies receive ongoing training. Students use technology to access the curriculum, communicate (expressively & receptively), receive spoken and/or visual information (DCMP program, real time captioning, etc.), and gain skills that will enable them to live and work as independently as possible. Students access network resources, email, and the Internet (for streaming media, video phone, reference materials, etc.).

Goal: Students will meet Montana technology standards through the use of GTCC technology curriculum, the MSDB Pre-T Essential Technology Skills Checklist or through sensory specific technology curriculums.

Objective	**Strategies**	**Performance Measurement**	**By Whom**	**Timeline**			**Cost Consider-ations**	**Estimated Costs**			**Funding Source**
				08-09	**09-10**	**10-11**		**08-09**	**09-10**	**10-11**	
Students demonstrate an understanding of the basic operations of technologies.	Learn hardware operations of equipment appropriate to needs	GTCC/Pre-T curriculum checklist, VI Assessments & checklists. Portfolios/ digital documentation. Online assessment (GTCC, TAGLIT – 8th grade)	Teachers	On-going Evaluate new students as they arrive			Texts, online resources, equipment	To be determined	To be determined	To be determined	Education
Students will use technology to communicate effectively and creatively.	Access Communication benchmarks from GTCC, MSDB Happenings, video pals (Sorenson), access captioned &/or descriptive media	GTCC/Pre-T curriculum checklist, VI Assessments & checklists. Portfolios/ digital documentation. Online assessment.	Teachers	On-going			Bandwidth for multiple video streams	See network costs	See network costs	See network costs	Education Network
Students use a variety of technologies to enhance productivity.	Access Productivity benchmarks from GTCC	GTCC/Pre-T curriculum checklist, VI Assessments & checklists. Portfolios/ digital documentation. Online assessment.	Teachers	On-going			Equipment, software	To be determined	To be determined	To be determined	Education

Students use technology responsibly and understand its impact on individuals and society.	Research present & future impacts of technology and related laws (cyber-bullying). Be able to discuss pros and cons about technology use. Understand and apply copyright laws.	GTCC/Pre-T curriculum checklist, VI Assessments & checklists. Portfolios/ digital documentation. Online assessment.	Teachers	On-going					Education,
Students develop the skills, knowledge & abilities to apply a variety of technologies to conduct research, manage information, and solve problems.	Students will be given opportunities to do research, manage their information, and solve problems under teacher direction following the GTCC at the appropriate grade level. Participate in E-field trips.	GTCC/Pre-T curriculum checklist, VI Assessments & checklists. Portfolios/ digital documentation. Online assessment.	Teachers	On-going					Education
Students apply technological abilities and knowledge to construct new personal understanding.	Provide opportunities to explore & expand their rights/responsibilities & develop a productive membership in society.	GTCC/Pre-T curriculum checklist, VI Assessments & checklists. Portfolios/ digital documentation. Online assessment.	Teachers	On-going					Education
Track student learning through portfolios	PowerPoint template	Create & update portfolios regularly	Teachers IT,Admin	On-going	Training & equip needed	**300**	**300**	**300**	Education

Area: Professional Development

Current Status: The staff at MSDB use computers during their duty time to teach the curriculum, celebrate successes and culture, complete their assigned duties, perform routine record keeping, and correspond electronically. Staff utilize a variety of technologies including digital media, CPS units, Wacom Interactive Boards, digital pens, video phones, embossers, Braille notetakers, CCTVs, and others. On-going training has been provided either in small groups or individually in order to maintain and expand staff skills as well as keep them current with technology hardware and software. Training has been and will continue to be noted as a Professional Development strand in our School Improvement Plan. Staff have participated in training via MSDB provided in-services, teleconferences, webinars, GTCC summer institutes, and from vendors of disability specific hardware/software.

Goal: MSDB will provide opportunities for staff development which emphasize technology as a teaching and learning tool. These opportunities will allow teachers to better integrate technology into their instructional activities as well as to continue to refine their basic technology skills. Staff will have access to technological resources including hardware, software, and technology integration support staff. In addition, MSDB will act as a technology resource to expand skills of professionals working with sensory-impaired students across Montana.

Objective	Strategies	Performance Measurement	By Whom	Timeline			Cost Considerations	Estimated Costs			Funding Source
				08-09	09-10	10-11		08-09	09-10	10-11	
Staff will develop & maintain basic skills and procedures needed to operate basic school technology and desktop applications	On-campus training. GTCC workshops. Continued distribution of monthly security letter and how-to tips	Staff will receive certificates of attendance, CEUS or credit for classes. Staff will complete an on-line self assessment (GTCC or Quia). Explore developing a MSDB tech assessment for staff.	IT staff	On-going			Comp time, overtime, subs. May need to outsource trainers.	1000	1000	1000	Staff Develop-ment or MSDBF Training
Staff will develop & maintain basic skills and procedures needed to operate hardware/software specific to their assigned service area.	On-campus training. Vendor training/support for specific hardware & software.	Staff will demonstrate proficiency by using specific hardware/ software in their areas. Complete an on-line self assessment or survey. Track MSDB provided in-services & attendance.	IT Staff	On-going			Comp time. Subs. Costs to bring in trainers.	1000	1000	1000	Staff Develop-ment or MSDBF Training
MSDB IT staff will receive on-going training in order to keep abreast of technological advancements.	IT staff will attend conference and/or specific training to meet IT area.	IT staff will implement skills and strategies learned. They will share with admin, staff & tech committee any ideas for improving MSDB technology.	Staff Dev. IT Staff	On-going			Conference or training costs (may include registration, air fare, hotel, per diem).	2000	2000	2000	MSDBF Training

Staff will have opportunities to participate in technology conferences.	Announce conferences at SIP meetings & teachers meetings. Staff to sign up and fill out paperwork.	Attend conference and report back to MSDB staff.	Staff Dev. IT Staff	On-going	Conference or training costs (may include registration, air fare, hotel, per diem) as well as sub costs.	3000	3000	3000	MSDBF Training
Continue to support professionals working with sensory-impaired students across the state	Work with school districts & university system. Survey professionals. Produce training & how-tos.	Successful completion of classes.	IT Staff Teachers Admin	Expand, on-going	Explore IP to IP video or audio. Streaming. WebCt, etc. Support equipment & materials. Time & labor to create CD/DVD presentations.	1000	1000	1500	Included with college fees, district fees, or separate funding source. For in house productions – Education, Rotation, MSDBF

Area: Network

Current Status: MSDB is running off of a fiber backbone with a majority of 1gb switches (4 switches still in the queue to upgrade). We currently host 8 servers running Server 2003 with corresponding server/application software. We access the Internet through a bursting T1; however, this connection is no longer keeping up with the demands we would like to place upon it. Therefore, we have requested an additional T1 line to support increased video streaming, video phones/conferencing, VPN access, etc. The website continues to be hosted off campus for network security reasons; however, we hope to increase our size limits in order to stream video &/or workshop materials. Our website is updated and maintained on a regular basis by the network manager. Our part-time IT support staff member tenure will more than likely end in the spring of 2008. AMP system has been repaired but is still loosing signal clarity. It is recommended that we explore other broadcasting methods. Atomic clocks and digital phone system have been installed. A digitally run video surveillance system has been instituted with the first phase completed. Technological equipment/services required are determined by educational goals and agency needs (long range building goals, safety committee, etc.).

Goal: To keep the network environment up-to-date and running smoothly while expanding it to access emerging technologies.

Objective	**Strategies**	**Performance Measurement**	**By Whom**	**Timeline**			**Cost Considerations**	**Estimated Costs**			**Funding Source**
				08-09	**09-10**	**10-11**		**08-09**	**09-10**	**10-11**	
Purchase replacement PCs and peripherals on a rotation basis	Follow rotation plan/schedule	New equipment in place where needed. Annual review.	IT Staff	On-going			Additional licenses for software	20000	20000	20000	State Rotation Fund
Purchase remaining additional GB switches for network upgrade	Follow plan laid out (HI, Cottage, gym & Vocational)	Switches in place and functioning	IT Staff	Com-plete			Installation costs	5000			State rotation, MSDBF
Purchase VPN server	Upon filling 2 remaining outreach services positions, research & request VPN server	VPN server installed and utilized	IT Staff	Comp leted?			Timeline based on new hire start date	2000			MSDBF Network
Purchase specific equipment to fulfill department needs	Create request lists for each dept. Purchase some from Contingency Fund, submit list and justifications to grant writer	Priority items purchased when funds available. Annual review.	IT Staff	On-Going			Training necessary to support equipment & software	To be deter mined	To be deter mined	To be deter mined	Education, MSDBF, grants

Maintain maintenance agreements as necessary as well as utility software licenses.	Review license expiration dates and purchase	Hardware maintenance agreements current. Utility software licenses current. Annual review	IT Staff	On-Going		Current versions may be phased out and upgraded products may need to be purchased	2000	2000	5000	MSDBF
Maintain current ½ time tech support if annual review warrants	Submit proposal for funding to MSDBF, contract with vendor	½ IT Assistant on staff for approx. 18.5 hpw Annual review	IT Staff, MSDBF	On-Going		If emergency occurs, may need to expand time	10000	10000	10000	MSDBF consulting
Add additional bandwidth	Justification submitted to ITSD, 470 completed. Finish state end of request & ERate forms. Install & implement.	Additional T1 installed and functional.	IT staff Business Manager Vendor	Initiate & Compete	Ongoing access fees	Current equipt should manage additional T1 – but has yet to be determined Additional equipment to receive & transmit bandwidth.	15000	12000	12000	ERate State
Maintain dynamic website	Schedule weekly dates for new pictures, student work and other areas to be submitted for posting	Website is kept current.	Network Manager, Admin	On-Going		Teacher and staff time. Storage space at ITSD. Explore costs for increased quota size	To be deter mined	To be deter mined	To be deter mined	State (Lumped into ITSD bill)
Explore/enroll in educational based subscription sites	Survey staff on sites that are good to use. Determine subscription costs	Once purchased, place in Quicklink spot where it is easily accessible to staff. Monitor use of site via a master teacher. Survey teachers regarding site usefulness. Determine status upon annual review	IT Principal Assigned Teacher				To be deter mined	To be deter mined	To be deter mined	
Update software & electronic subscriptions required by various departments annually.	Staff put education software & electronic subscriptions requests to Principal/Librarian. Update SMAs when expired & complete version upgrades as necessary.	Requested software purchased. Annual review	Principal Librarian IT Staff	On-Going		VI licensing costs are high	7000	7000	7000	Education, MSDBF, grants

Maintain Library connectivity	Renew yearly maintenance & connectivity fees	Annual Review	Librarian Network Manager	On-going. Yearly renewal			If we go to MT shared catalog, a new scanner may be needed	4800	4800	4800	Education
Maintain Outreach & Remote Office connectivity	DSL/Cable/Satellite $49/pmpu & VPN $10/pmpu fees	Annual Review	IT Staff Business Manager	On-Going			New staff (2 open positions in estimate)	6700	6700	6700	Varies
Support professionals staff working with LV/B or D/HH students	Survey what is needed and explore delivery options (face to face, mail, streaming, downloads, etc.). Creation of "how-to" documents, powerpoints or videos.	Annual Review	IT Staff Teachers Support services	On-Going			Time to create survey, collate data received, analyze Possible link with university to offer credit.				Outreach Services
Produce CD, DVDs or streaming media for use on website and on-line classes in order to support professionals working with sensory impaired students across Montana	Work with depts to create list of projects. Develop script/storyboard. Capture material and produce	Media being shared and used. Master copies stored in library. Annual review	IT Staff Teachers Outreach Services	Expand	On-Going		Equipment & software costs. Additional costs for ITSD storage. Staff time.	1500	1500	1500	Education, MSDBF, grants
Explore & expand video conferencing technologies	Survey/meet with districts/OPI. (dependent upon additional bandwidth installation)	T1 installed and continuation/expansion of Sorenson use as well as webcam activities based on survey results	IT Staff Teachers Outreach staff				Equipment, bandwidth, tech support time, teacher time				Grants, E-Rate
Explore/install new video broadcasting system.	Research options. Purchase. Install and implement.	System up and running with clear channel reception.	IT Staff	Re-search	Com-pleted		Areas of campus covered		To be determined		MSDBF Network
Explore announcement and/or "bell" system – text boards in classrooms	Visit with admin. Research possible systems that could tie into network.	Findings presented to administration.	Tech Committee	Research	Ongoing	Present results	Areas of campus covered				
Provide "Tips & Tricks" to parents via MSDB Happenings newsletter	Follow schedule provided by the school improvement committee	Annual review	Network Manager SI committee	Begin	On-going	On-going	IT Staff time				

Section C: MSDB Inservice/Training Opportunities

In-service opportunities are based on survey results, department requests, educational goal completion, and/or agency need. The following training opportunities will be available as needed or requested in a small group or individual basis:

Inservice/Training Opportunities	**2008-2009**	**2009-2010**	**2010-2011**
Basic troubleshooting (system, printers)	On-going	On-going	On-going
Windows XP	On-going	On-going	On-going
Office 2003	On-going	On-going	On-going
Other applications (VisiForm, SASIxp, IEP, etc.)	On-going	On-going	On-going
CPS & Examview	On-going	On-going	On-going
Multimedia software	On-going	On-going	On-going
Network Access (Server 2003) On campus/off campus access	On-going	On-going	On-going
Utility software (Anti-virus, anti-spyware, etc.)	On-going	On-going	On-going
Internet	On-going	On-going	On-going
Library Services (including DCMP streams)	On-going	On-going	On-going
Digital Equipment (cameras, projectors, card readers, scanners, etc.)	On-going	On-going	On-going
Area specific hardware/software (B, LV, Adaptive, D/HH)	On-going	On-going	On-going

The following conferences/in-service opportunities are available to staff via our professional development plan:

Closing the Gap/CSUN conference (VI, MHC)	As appropriate	As appropriate	As appropriate
Conference on Technology for the Deaf	As appropriate	As appropriate	As appropriate
Conferences (NCCE, NECC, others)	As appropriate	As appropriate	As appropriate
GTCC Summer Workshops	As requested	As requested	As requested

The following training will be made available if equipment and/or bandwidth is expanded:

SmartBoards	Upon purchase	Upon purchase	Upon purchase
Video Conferencing	Upon implementation	Upon implementation	Upon implementation

Students to receive "rules and regs" orientation in the fall of each year as they sign their user contracts.

Section D: Department Requests

(If X is present in more than one year, purchasing & costs will be spread out over the years covered.)

Department	Item	Cost	Grant Request in	Grant submitted	Grant Awarded	08-09	09-10	10-11
Blind/Low Vision								
	1Graphic Embosser	15000	X	X				
	2 infra-red classroom laser	800					X	X
	5 Elmos	3375	X					
	3 SmartBoard w/Airliners	5145	X					
	4 Notetakers	14400	X	X				
	3 scanners	250				X	X	X
	2 Step by Step	300				X	X	
	1 SuperTalker	370						X
	1 Tash Telephone w/remote & ECU	1450	X					
	1 IntelliTools classroom suite w/ peripherals & training	1600	X					
	1 Boardmaker w/Speaking Dynamically Pro Update	100	X	X				
	1 Digital Voice Organizer	100	X	X				
	8 GPS Trekker	13600				X	X	X
	10 rotation/replacement desktops	10000				X		
	3 rotation/replacement CCTVs (portable)	2500				X	X	X
	Update Window Eyes, Jaws, Magic, Duxbury (VI licenses)	8000 per yr				X	X	X
Deaf/HH								
	10 Elmos	6750	X					
	10 SmartBoard w/Airliners	17150	X					
	2 Digital Cameras	400					X	X
	2 Video Cameras	1000				X	X	
	6 scanners	600				X	X	X
	4 rotated/replaced laptops	4500					X	X
	2/5/3 rotated/replaced desktops	2000/5000/3000				X	X	X
	1 UbiDuo Communicator System	2000				X		
	3 Front Row Sound Systems	3600				X	X	X
	12 Web Cams	600				X	X	X
Library								
	Connectivity/Renewal Fees	14400				X	X	X
	3 rotation/replacement computers	3000					X	
Mustang Center								
	Large projection system for the gym	20000	X					
Network								
	1 48 port for HI (or 2 24 ports), 1 24 port for VI, 1 12 port for cottage	6000				X		

	TI/connectivity to Internet	11760				X	X	X
	1 VPN server	2000				X		
	Utility Software licenses	5000 per yr				X	X	X
	1 Video Conferencing Unit	Research						
	Updated Broadcasting System	Research						
	Message Board System	Research						
Residential Program								
	4 digital cameras	800				X	X	X
	1 Portable Sound System	1200					X	
	1 video camera	500					X	
	5/5/5 rotation/replacement computers	5000/5000/5000				X	X	X
	5 UPS	500				X	X	X
	1 LG screen TV	3000						X
Outreach								
	2 projectors	3000					X	X
	1 digital camera	200				X		
	1 video camera	500					X	
	11 connectivity packages (IS & VPN)	7920 per yr				X	X	X
	11 Webcams	550					X	
	Explore PDAs							
Support Services								
	1 Rotation desktop	1000				X		
Admin Office								
	1 UPS	60						
	2 connectivity packages (IS & VPN)	1440 per yr				X	X	X

Section E: Budget

2008-2009: Projected
MSDB Foundation

Network: $15,000
Training: $7,000
Consulting: 10,000
Contingency Fund: $12,000
Equipment: $50,000 (obtained through grant process)

State $25,000
E-Rate: $11760

2009-2010: Projected
MSDB Foundation

Network: $10,000
Training: $7,000
Consulting: $10,000
Contingency Fund: $10,000
Equipment: $50,000 (obtained through grant process)

State $25,000
E-Rate: **$**11760

2010-2011: Projected
MSDB Foundation

Network: $10,000
Training: $7,000
Consulting: $10,000
Contingency Fund: $10,000
Equipment: $50,000 (obtained through grant process)

State $25,000
E-Rate: $11760

*consulting
The technology planning committee is recommending that the budget area titled, "Consulting", should be defined as:

- Technological support which could include bringing in experts on specialized equipment and software.
- Providing training for the network manager and technology trainer related to our network system maintenance
- Additional help/facilitator during the evaluation process
- Outside assistance needed for web-site maintenance

Section F: Evaluation Process

MSDB will monitor progress toward these goals and make mid-course corrections in response to new developments and opportunities as they arise using the following assessment tools and timelines.

Staff Assessment (annually)

Online Golden Triangle Cooperative Self Evaluation Rubric for Staff Technology Profile - http://www.gtccmt.org/profdevelop/teacher_selfevaluation.php

See: Performance Measurements

Student Assessment (annually)

Online Golden Triangle Cooperative Self Evaluation Rubric for Student Technology Profile - http://www.gtccmt.org/profdevelop/student_selfevaluation.php

Taking A Good Look at Instructional Technology (TAGLIT) – 8th grade only

See: Performance Measurements

Network Report (annually)

The Network Manager will report on network functionality and capacity and recommend any necessary upgrades to the system as well as hardware and software (licenses) needs.

Technology Plan Review (**annually)**

The Technology Committee, made up of representation from MSDB departments (Education, Outreach, Student Services, Administration) and the Montana School for the Deaf and Blind Foundation, will meet at least biannually to review and/or update the plan. Data retrieved from the above assessments, department reports, and parent/constituent feedback will be taken into consideration. Continuing, adding or eliminating technological equipment and services will be determined by departmental needs (to meet educational and technology goals) as well as agency requirements. The Technology Plan will be updated and revised at least annually with all updates submitted and approved by the Administration.

Section G: Appendixes

A. Golden Triangle Cooperative Technology Standards (available in hard copy). **GTCC Technology Standards will be reviewed/revised starting January, 2008. Upon completion, updated curriculum standards will be available in hard copy.)**

1 Grades K-2
2 Grades 3-5
3 Grades 6-8
4 Grades 9-12

B. MSDB Pre-T Essential Skills Checklist (available in hard copy) and the Student's Computer Abilities (K – 12) (VI framework from TSB – available in hard copy)

C. Montana Technology Content and Performance Standards
http://www.opi.state.mt.us/pdf/Standards/ContStds-Tech.pdf

D. ISTE Teacher Standards
ISTE - NETS for Teachers
Educational Technology Standards and Performance Indicators for All Teachers

Building on the NETS for Students, the ISTE NETS for Teachers (NETS•T), which focus on preservice teacher education, define the fundamental concepts, knowledge, skills, and attitudes for applying technology in educational settings. All candidates seeking certification or endorsements in teacher preparation should meet these educational technology standards. It is the responsibility of faculty across the university and at cooperating schools to provide opportunities for teacher candidates to meet these standards.

The six standards areas with performance indicators listed below are designed to be general enough to be customized to fit state, university, or district guidelines and yet specific enough to define the scope of the topic. Performance indicators for each standard provide specific outcomes to be measured when developing a set of assessment tools. The standards and the performance indicators also provide guidelines for teachers currently in the classroom.

1 TECHNOLOGY OPERATIONS AND CONCEPTS.
Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:
- demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Education Technology Standards for Students)
- demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

2 PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES.
Teachers plan and design effective learning environments and experiences supported by technology. Teachers:
- design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.
- apply current research on teaching and learning with technology when planning learning environments and experiences.
- identify and locate technology resources and evaluate them for accuracy and suitability.
- plan for the management of technology resources within the context of learning activities.
- plan strategies to manage student learning in a technology-enhanced environment.

3 TEACHING, LEARNING, AND THE CURRICULUM.
Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning. Teachers:
- facilitate technology-enhanced experiences that address content standards and student technology standards.
- use technology to support learner-centered strategies that address the diverse needs of students.
- apply technology to develop students' higher order skills and creativity.
- manage student learning activities in a technology-enhanced environment.

4 ASSESSMENT AND EVALUATION.

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies. Teachers:

- apply technology in assessing student learning of subject matter using a variety of assessment techniques.
- use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
- apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

5 PRODUCTIVITY AND PROFESSIONAL PRACTICE.

Teachers use technology to enhance their productivity and professional practice. Teachers:

- use technology resources to engage in ongoing professional development and lifelong learning.
- continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
- apply technology to increase productivity.
- use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

6 SOCIAL, ETHICAL, LEGAL, AND HUMAN ISSUES.

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice. Teachers:

- model and teach legal and ethical practice related to technology use.
- apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- identify and use technology resources that affirm diversity
- promote safe and healthy use of technology resources.
- facilitate equitable access to technology resources for all students.

E. Relevant Research

Boss, S. (2001). Growing Great Teachers: Professional Development That Works *Northwest Regional Magazine, 5(4)*. Retrieved April 18, 2003 from http://www.nwrel.org/nwedu/summer00/great3.html

Center for Applied Research in Education Technology (2003). Retrieved April 18, 2003 from http://caret.iste.org

Cotton, K. (1999). *Research You Can Use To Improve Results.* Oregon: Northwest Regional Evaluation Laboratory

Hasselbring, T. S. and Williams Glaser, C. H. (2000). Use of Computer Technology to Help Students with Special Needs *Children and Computer Technology* 10, *Children and Computer Technology, 10*(2). Retrieved April 18, 2003 from http://www.futureofchildren.org/information2826/information_show.htm?doc_id=69815

How People Learn: Brain, Mind, Experience, and School: Expanded Edition (2000). (pp. 206-230). Washington, D.C.: National Academy Press

ISTE NETS Project (2002). *National Educational Technology Standards.* Retrieved April 18, 2003 from http://cnets.iste.org/index.shtml

Lebo, H. (2003). *The UCLA Internet Report: Surveying the Digital Future Year* Three Retrieved April 18, 2003 from UCLA Center for Communication Policy Web site: http://www.ccp.ucla.edu/pages/internet-report.asp

Levin, D. and Arafeh, S. (2002). *The Digital Disconnect: The Widening Gap Between Internet-savvy Students And Their Schools.* Retrieved April 18, 2003 from http://www.pewinternet.org/reports/toc.asp?Report=67

National Center for Education Statistics (2002). *The Condition of Education.* Retrieved April 18, 2003 from http://nces.ed.gov//programs/coe/

National Center for Education Statistics (2002). *The Condition of Education.* Retrieved April 18, 2003 from http://nces.ed.gov//programs/coe/

Penuel, W. R., Kim, D. T., Michalchik, V., Lewis, S., Means, B., Murphy, R., Korbak, C., Whaley, A., & Allen, J. E. (2002). *Using technology to enhance connections between home and school: A research synthesis.* Planning and Evaluation Service, U. S. Department of Education, DHHS Contract #282-00-008-Task 1. Retrieved April 18, 2003 from http://www.sri.com/policy/ctl/html/synthesis1.html

Roschelle, J. M., Pea, R. D., Hoadley, C. M., Gordin, D. N., & Means, B. M. (2000). Changing how and what children learn in school with computer-based technology. *Children and Computer Technology, 10*(2). Retrieved April 18, 2003, from http://www.futureofchildren.org/pubs-info2825/pubs-info.htm?doc_id=69787

Schmitt, C. (2002). Technology in Schools: Suggestions, Tools and Guidelines for Assessing Technology in Elementary and Secondary Education *U.S. Department of Education Office of Educational Research and Improvement NCES 2003–313.* Retrieved April 18, 2003 from http://nces.ed.gov/pubs2003/2003313.pdf

U.S. Department of Education (2000). *e-Learning: Putting a World-Class Education at the Fingertips of All Children.* Retrieved April 18, 2003 from http://www.ed.gov/Technology/elearning/

F. Additional resources

Mayfield, J. (2003), Golden Triangle Curriculum Consortium Technology Plan Template

Montana Office of Public Instruction (2003). *Ed Tech Competitive Grant Application 2003-2004.* Retrieved April 18, 2003 from http://www.opi.state.mt.us/PDF/EdTech/CompTechGrantApp.pdf

No Child Left Behind (2001). Retrieved April 18, 2003 from http://www.nclb.gov/

International Society for Technology in Education (2000). *National Educational Technology Standards for Students: Connecting Curriculum and Technology.* Oregon: International Society for Technology in Education

Linda McCulloch, Superintendent
Office of Public Instruction
PO Box 202501
Helena, MT 59620-2501
www.opi.state.mt.us

E-RATE TECHNOLOGY PLAN DISTRICT STATEMENT OF ASSURANCES

(E-RATE PLANS MAY NOT BE APPLICABLE TO OTHER TECHNOLOGY PROGRAMS)

School District: Montana School for the Deaf & the Blind **County:** Cascade **LE:** 9258

School Years Covered by the Technology Plan (example, 2004-2007) 2008-2011

Web Site Address for Technology Plan www.msdb.mt.gov

Successful technology plans align the overall education improvement objectives with the following criteria. To qualify as an approved Technology Plan for a Universal Service Program discount, the plan must meet the criteria. It is critical that technology planning not be viewed or treated as a separate exercise dealing primarily with hardware and telecommunications infrastructure. There must be connections between the proposed physical infrastructure of the information technology and the plan for professional development, curriculum reform, and library service improvements. Technology plans may be approved for up to three years for funding under the E-Rate program. The Schools and Libraries Division (SLD) of the Universal Services Administrative Company, which is overseen by the Federal Communications Commission, administers the E-Rate program.

For E-Rate program information: http://www.sl.universalservice.org/ and/or http://www.opi.state.mt.us/ERate2.html

TECHNOLOGY PLAN CRITERIA	PAGE NUMBER REFERENCES
Clear Goals and a Realistic Strategy for using Telecommunications The plan establishes **clear goals** and a realistic strategy for using telecommunications and information technology to improve education or library services.	List the page numbers from the district technology plan where the information for the specific criteria can be found.
Minimum Criteria	
✓ Clear technology/education goals are articulated for the use of technology to improve education,	See Page(s): 6 & 7
✓ A realistic strategy is designed and implemented for meeting the goals to improve education, and	See Page(s): 7 & 8
✓ Goals are articulated for the current and each future year that the plan covers. Plans may be approved for up to three years for funding under the E-Rate program.	See Page(s): 7 & 8
Best Practice Recommendations	
✓ District technology goals are aligned with the district's Five-Year Comprehensive Education Plan and other school improvement goals.	See Page(s): 5
Professional Development Strategy The plan has a **professional development strategy** to ensure that staff knows how to use the new technologies to improve education or library services.	List the page numbers from the district technology plan where the information for the specific criteria can be found.
Minimum Criteria	
✓ Professional development strategy includes information such as professional development opportunities planned, professional development available locally (through local/regional providers) and/or participation in curriculum, technology or professional development consortiums, and	See Page(s): 6, 9,10,14
✓ Professional development strategy and expenses are articulated for the current and each future year that the plan covers. Plans may be approved for up to three years for funding under the E-Rate program.	See Page(s): 9 & 10
Best Practice Recommendations	
✓ Data utilized to determine professional development topics, and	See Page(s): 9, 10, 14
✓ Assessment methods to determine effectiveness of professional development experiences are included.	See Page(s): 9, 10, 18

Assessment of Telecommunication, Hardware, Software and Other Services The plan includes an assessment of the **telecommunication services, hardware, software** and **other services** that will be needed to improve education or library services. **Minimum Criteria** ✓ Hardware, software and other services are included in a district assessment of telecommunication services needed to improve education, ✓ Services such as professional development, wiring and technical support needed are included, and ✓ Assessment of services needed is articulated for the current and each future year that the plan covers. Plans may be approved for up to three years for funding under the E-Rate program. **Best Practice Recommendations** ✓ Assessment of services needed is clearly linked to the district's technology and education goals.	List the page numbers from the district technology plan where the information for the specific criteria can be found. See Page(s): 11 - 13 See Page(s): 11 - 13 See Page(s): 11 - 13 See Page(s): 5, 6, 11, 18
Sufficient Budget The plan provides for a **sufficient budget** to acquire and support the non-discounted elements of the plan: the hardware, software, professional development, and other services that will be needed to implement the strategies. **Minimum Criteria** ✓ District articulated local budget, including funds from all sources, that will provide the necessary support for the services included in the technology plan including the district portion of the discounted services requested under the E-Rate program is included, ✓ Budget is articulated for the current and each future year that the plan covers. Plans may be approved for up to three years for funding under the E-Rate program, and ✓ Budget includes all items covered by the E-Rate discount, professional development expenses and other services needed to implement the plan.	List the page numbers from the district technology plan where the information for the specific criteria can be found. See Page(s): 7 - 13, 17 See Page(s): 7 - 13, 17 See Page(s) 7 - 13, 17
Evaluation Process for revising the Technology Plan The plan includes an **evaluation process** that enables the school or library to monitor progress toward the specified goals and make mid-course corrections in response to new developments and opportunities as they arise. **Minimum Criteria** ✓ Evaluation process must include: who reviews the plan (technology committee, school board, etc.), how often the plan is reviewed, the information that is utilized to review the plan and a statement that the changes will be made as needed.	List the page numbers from the district technology plan where the information for the specific criteria can be found. See Page(s): 6, 18

Certification: I certify that the E-Rate Technology Plan Statement of Assurances is accepted as a basic condition for local participation in the E-Rate program. The district hereby assures the Office of Public Instruction that all of the requirements itemized above have been met. Further, the district acknowledges that both the OPI and the Schools and Library Division conduct audits and that the technology plan, meeting the criteria, must be made available immediately upon request.

Printed Name of Designated Authorized Representative		
STEVEN GETTEL	X Superintendent ____ Principal if there is no superintendent. ____ County Superintendent, if there is no superintendent or Principal	
Signature of Designated Authorized Representative Steven Gettel	District Name MSDB	Date 01-17-08

Retain a copy of this document for your records.	**Return this document completed with the page number references, district information, and signature to:** **Montana Office of Public Instruction** **Attn: Michael Hall** **PO Box 202501** **Helena, MT 59620-2501**	**Return only the completed and signed document to the OPI.**